

REMARKS

Claims 32, 33, 34, 42 and 44 were objected to as lacking proper antecedents for some of the claim terms and elements.

Claims 32-44 have been amended for clarity and to correct antecedents. The subject matter of claim 31 is now presented in new claim 45. New claim 45 was written to clarify the subject matter.

Claims 31-33, 35 and 39-42 were rejected under 35 U.S.C. 102(b) as being anticipated by Steinich et al. (US6084400), hereinafter Steinich

Independent claim 45 does not read on Steinich. As such, claim 45 as well as the claims which depend therefrom are patentable. New claim 45 was written to clarify the subject matter. Reconsideration of claims 32-45 is requested.

Claims 32-44 have been amended for clarity. The invention as claimed is believed to be highly patentable.

Claim 45 recites: "...said sensor element (SE) provides a second output (23) substantially but not precisely simultaneously with said first output at time (Ts) when said ferromagnetic element (FE) is triggered and remagnetized by said exciter magnet (EM); said first and second outputs are shifted in time with respect to each other, said time shift and sequence of occurrence of said first and second outputs determines the direction in which said remagnetization of said ferromagnetic element is triggered..." and therefore provides, at the same time, Ts, information that a particular pole (North or South) is right or left of the center line. Steinich uses two ferromagnetic elements **displaced angularly** from each other and each of Steinich's ferromagnetic elements includes a coil therearound. As such, **Steinich cannot simultaneously acquire information** that a particular pole (North or South) is right or left of the center line

using two coils surrounding a single ferromagnetic element.

Steinich discloses a rotation sensor which requires **two** ferromagnetic elements, see among others claim 1: "... the counting arrangement (4) comprises at least **two** pulse-wire motion sensors (70, 71) ..."

Applicant employs a single ferromagnetic element with an induction element and a sensor element surrounding the single ferromagnetic element to substantially simultaneously acquire information from each element as to the remagnetization direction and position of the exciter magnet right or left of the centerline and the orientation of its poles.

The instant invention as claimed in claim 45 provides 4 unique states each of which are determined substantially simultaneously with their occurrence. By substantially simultaneously it is meant that the occurrence of the first and second outputs are very close in time independently of further movement of the exciter magnet after triggering. See specification, page 9, second full paragraph wherein it is stated: *"As the exciter magnet EM moves past the ferromagnetic element FE, it remagnetizes the element and thus generates voltage pulses of corresponding polarity. These pulses can be tapped from the output terminals 22 and 23 of the two coils. The second induction coil SP2 serves here as an additional sensor element for determining the direction in which the remagnetization is triggered. The direction in which the remagnetization is triggered and thus the position of the exciter magnet EM can be derived from the time shift between the voltage maxima of the two coils."*

Also see, specification, page 3, second full paragraph wherein it is stated that: *"Although the reversal wave thus produced in the ferromagnetic element is of finite velocity, the velocity is high enough in comparison to the speed of the exciting magnet that it is possible to speak of*

an "instantaneous reversal" of the domain."

Steinich, lacks the claimed subject matter and claims 32-33, 35, 39-42 and 45 are therefore patentable.

Reconsideration of claims 32-33, 35, 39-42 and 45 is requested.

Claims 31, 36 and 37 were rejected under 35 U.S.C. 102(b) as being anticipated by Zabler et al. (US4,150,314), hereinafter Zabler.

Zabler, like Steinich, does not disclose the claimed induction element and sensor element surrounding a single ferromagnetic element. Reference is made to Fig. 2 and column 2, line 57 to column 3, lines 1-5, of Zabler wherein it is stated that: *"The coil 4 is additionally subjected to induced voltages due to change in flux upon passage of the magnets 2 in front of coil 4. These induced voltages are seen in FIG. 2a as voltage 7; the Wiegand pulse is shown as pulse 6. The two pulses will be superimposed in coil 4, as seen in graph a of FIG. 2. The compensation coil 3 will also have a voltage induced therein, shown in graph b of FIG. 2. Due to the reverse direction of winding of the compensation coil, or due to the inverse connection thereof, the voltage induced in coil 3 will be opposite to the voltage induced in coil 4, as can be clearly (sic, clearly) seen by comparison of graphs a and b of Fig. 2. The Wiegand wire is located to be surrounded solely by coil 4. Thus, since the compensation coil 3 is not included within the change of magnetic field of the Wiegand wire, no Wiegand pulse will occur in coil 3."*

Zabler is directed toward producing a level output at various speeds and does not disclose the claimed elements set forth in claim 45.

Reconsideration of claims 36, 37 and 45 is respectfully requested.

Claims 34, 38 and 43 were rejected under 35 U.S.C. 103(a) as being unpatentable over Steinich in view Romanik et al. (US71 13063), hereinafter Romanik.

In regard to amended claim 34, Steinich does not disclose “a second output (23) substantially but not precisely simultaneously with said first output at time (Ts) when said ferromagnetic element (FE) is triggered and remagnetized by said exciter magnet (EM); said first and second outputs are shifted in time with respect to each other, said time shift and sequence of occurrence of said first and second outputs determines the direction in which said remagnetization of said ferromagnetic element is triggered...” as claimed in claim 45 as indicated above. Steinich does not make the claimed substantially simultaneous determination about the position and polarity of the exciter magnet using coils surrounding a single ferromagnetic element as set forth above.

Romanik discloses an apparatus implementing and using techniques for sensing rotations of a rotating device. Starting from this document there is no hint that the direction of the movement could be detected. This is not necessary as this apparatus is used to count the gas flow in a pipe which is always in the same direction. Romanik mentions Hall effect switches but it is respectfully suggested that the mere mention of the Hall device in combination with the deficient primary reference (Steinich) does not constitute a proper prima facie showing of obviousness.

As such, it is believed that claims 34, 38 and 43, as amended are patentable and reconsideration is requested.

Claim 44 was rejected under 35 U.S.C. 103(a) as being unpatentable over Steinich in view of Muller(DE3317502).

The rejection of claim 44 is respectfully traversed for the reasons stated above in regard to the deficiencies of Steinich. DE 33 17 502 Al "Muller" does not disclose any information exceeding the references discussed above.

Claim 44 is believed patentable and reconsideration is respectfully requested.

Summary

Reconsideration of claims 32-45 is requested. This After-Final Amendment and Interview Summary Record is in response to the office action dated November 6, 2008 and is being submitted together with a one-month extension of time and payment therefor. In the event that the office deems this response as untimely within the one-month time period extension, please consider this as a conditional petition for an extension of time in which to file this After-Final Amendment. Additionally, please charge deposit account 23-3060 as required.

Claims 32-45 are in the application. The undersigned thanks the Primary Examiner for the courtesy of the interview of February 13, 2009. The undersigned invites the Primary Examiner to telephone upon receipt of this after-final amendment to discuss its entry or need to file an RCE.

Respectfully submitted,

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